

Appl. No. 10/750,355  
Amdt. dated February 21, 2006  
Reply to Office Action of October 19, 2005

### REMARKS/ARGUMENTS

Claims 102, 107, 108, and 110-112 are amended (the amendments to claims 102, 107, 111, and 112 and the amendment to claim 110 in which interconnection is changed to interconnect are to correct typographical errors and not for reasons of patentability). In addition, claims 1-84 and 86-101 are canceled, and claims 125-135 are newly added. Claims 85 and 102-135 are now pending in the application, of which claims 103 and 135 are withdrawn. Applicants respectfully request reexamination and reconsideration of the application.

Initially, new claims 125-128, which depend from independent claim 102 or claim 108, read on the elected species 14 (corresponding to Figures 29-32) and are generic to several of the other species identified in the Restriction of February 11, 2005. In addition, new independent claim 129 and dependent claims 130-134 read on elected species 14 and at least claims 129-131 are generic to several of the other species in the Restriction of February 11, 2005. New claim 125 is withdrawn as directed to a non-elected species.

Claims 102, 107-110, 114-116, and 121-123 were rejected under 35 USC § 102(b) as anticipated by US Patent No. 5,462,446 to Ikeya ("Ikeya"), and more specifically by the prior art discussed in Ikeya at Figure 1, included with the Office Action as Attachment 1 (hereinafter referred to as the "Attachment 1"). In addition, claims 85, 104-106, 111-113, 117-119, and 124 were rejected under 35 USC § 103(a) as obvious in view of Ikeya. Applicants respectfully traverse these rejections.

Independent claim 102 is directed to an "electronic interconnect element" that comprises at least "a first leaf portion" and "a second leaf portion." Claim 102 further recites that a "first support joins the first leaf portion to the second leaf portion." As can be seen in the Attachment 1, what is labeled the first support in the Attachment 1 does not join the contact 103 (which the PTO equated with the first leaf portion of claim 102) to the fixed body portion 102 (which the PTO equated with the second leaf portion of claim 102). Rather, what is labeled the first support in the Attachment 1 joins the contact 103 with what is labeled the second support. Thus, Ikeya does not teach or suggest a first support that joins a first leaf structure to a second leaf structure as would be required to anticipate claim 102. For this reason alone, Ikeya does not anticipate claim 102.

Claim 102 also recites that the "contact tip [is] located on a first side of the first leaf portion," the "first support [is] coupled to an opposite side of the first leaf portion," the first side

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of the second leaf portion is coupled to the first support, and the "second support [is] coupled to the opposite side of the second leaf portion." Claim 102 further recites that "the first side of the first leaf portion, the opposite side of the first leaf portion, the first side of the second leaf portion, and the opposite side of the second leaf portion *are substantially parallel*." Applicants respectfully submit that—with the contact portion 105 of Ikeya equated with the contact tip of claim 102, the flexible portion 103 of Ikeya equated with the first leaf portion of claim 102, and the fixed body portion 102 of Ikeya equated with the second leaf portion of claim 102—there is no possible set of sides and opposite sides of the flexible portion 103 and the fixed body portion 102 of Figure 1 of Ikeya that are both substantially parallel and meet the descriptions of the first leaf portion and the second leaf portion in claim 102. Therefore, for this further reason, Ikeya does not anticipate claim 102.

Moreover, the foregoing structural differences between claim 102 and Ikeya—that is, Ikeya lacks a first support that joins a first leaf structure to a second leaf structure, and no set of sides and opposite sides of elements 102 and 103 in Ikeya meet the substantially parallel recitation in claim 102—are not trivial or obvious or a matter of mere design choice. Rather, those differences give rise to advantages not found in Ikeya. For example, the interconnect structure of claim 102 is more versatile and can be used to electrically connect a wider variety of different types of electronic devices and different configurations of electronic devices than the socket structure shown in Figure 1 of Ikeya. Ikeya does not therefore render claim 102 obvious.

New claims 125 and 126 depend from claim 102 and recite additional features that further distinguish over Ikeya. Claim 125 states that "each of the first leaf portion and the second leaf portion is configured to flex in response to a force on the contact tip." Claim 126 recites that "each of the first leaf portion and the second leaf portion is resilient and configured to generate a counter force in response to the force on the contact tip." Applicants respectfully point out that element 102 (which the PTO equated with the second leaf portion) of Figure 1 of Ikeya is not a resilient or flexural element and does not move or bend, either as disclosed in that figure or as suggested by any text in Ikeya. Indeed, Ikeya expressly describes element 102 as "fixed" and describes only element 103 as "flexible." (Ikeya col. 1, lines 18-21.)

Moreover, the foregoing differences between claims 125 and 126, on one hand, and Ikeya, on the other hand, are not trivial or obvious or matters of mere design choice but provide advantages not found in Ikeya. For example, although claims 125 and 126 are not so limited, the

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interconnect elements of claims 125 and 126 can be spring-like interconnect structures in which the spring properties of the interconnect structures are distributed among a plurality of leaf portions. Ikeya provides no such advantage. Therefore, Ikeya does not render claims 125 or 126 obvious.

Independent claim 107 includes recitations that are similar to some of the recitations described above with respect to claim 102. Claim 107 is therefore patentable over Ikeya for at least some of the same reasons discussed above with respect to claim 102. In addition, new claims 127 and 128 recite features that are generally similar to the features recited in claims 125 and 126. Claims 127 and 128 are therefore also patentable over Ikeya.

Independent claim 108 recites that "each of said leaf structures is configured to flex in response to a force on said contact tip structure from contact with said second electronic component." As discussed above, Ikeya's fixed body portion 102 (which the PTO equated with the second leaf structure of claim 108) does not flex but is "fixed." In fact, according to Ikeya, the only flexible portion of the structure shown in Figure 1 is the flexible portion 103. (Ikeya col. 1, lines 18-21.) Moreover, as discussed above, although claim 108 is not so limited, the interconnect element of claim 108 can be a spring-like interconnect, and the fact that a plurality of leaf structures are flexible, allows spring properties of the interconnect element to be distributed among the leaf structures. No such advantage can be found in Ikeya. Therefore, claim 108 is not only novel with respect to Ikeya, but claim 108 is also not obvious in view of Ikeya.

Claims 107-110, 114-116, and 121-123, each of which was rejected as anticipated by Ikeya, depend from one of claims 102 or 108 and are therefore patentable over Ikeya for the same reasons that claims 102 and 108 are patentable over Ikeya. In addition, claims 107-110, 114-116, and 121-123 recite additional features not taught or suggested by Ikeya.

For example, claim 110 now recites that "each of said plurality of leaf structures is movable in response to a force applied to said contact tip structure." As discussed above, element 102 of Ikeya is not moveable in response to a force on element 105.

As another example, claim 114 recites that "upon application of a force to said contact tip structure, each one of said leaf structures deforms towards another of said leaf structures." As discussed above, element 102 is fixed and thus cannot deform toward (or away) from element 103 in response to a force on element 105.

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For the foregoing and other reasons, claims 107-110, 114-116, and 121-123 further distinguish over Ikeya.

Claims 85, 104-106, 111-113, 117-119, and 124, which were rejected as obvious in view of Ikeya, depend from one of claim 102 or 108 and are therefore patentable over Ikeya for the same reasons that claims 102 and 108 are patentable over Ikeya. Moreover, claims 85, 104-106, 111-113, 117-119, and 124 recite additional features that further distinguish over Ikeya.

Initially, as stated in the MPEP, to reject claims as obvious, "there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings." (MPEP § 2143.) Absent such showings, the PTO cannot properly reject a claim on the grounds of obviousness.

In rejecting 85, 104-106, 111-113, 117-119, and 124 as obvious in view of Ikeya, however, the PTO made no attempt to show either a suggestion or motivation to modify Ikeya. Instead, the PTO relied solely on legal precedent. As stated in the MPEP, however, legal precedent can be relied on only if "the facts in a prior legal decision are sufficiently similar to those in an application under examination." (MPEP § 2144.) The PTO has not shown that the facts in any of the legal cases relied on as rational for finding claims 85, 104-106, 111-113, 117-119, and 124 obvious in view of Ikeya are "sufficiently similar" to the facts in the present application. For example, the PTO has not shown that the invention at issue in any of the court cases relied on as rational for modifying Ikeya to meet the features of claims 85, 104-106, 111-113, 117-119, and 124 is an electrical contact structure like or even similar to the electrical contact structure shown in Figure 1 of Ikeya. In fact, because the inventions at issue in those court cases are not like the electrical contact structure of Figure 1 in Ikeya, the facts of the prior legal decision are not sufficiently similar to the facts at issue in the instant application, and the PTO accordingly cannot rely on the legal precedent in those cases as a substitute for the requirement that "there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings." (MPEP § 2143.) Therefore, the PTO must show a suggestion or motivation to modify Ikeya to meet the features of claims 85, 104-106, 111-113, 117-119, and 124 or withdraw the rejection of those claims as obvious in view of Ikeya.

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Applicants respectfully submit that there is no motivation or suggestion in the prior art to modify Ikeya to include the features and elements of claims 85, 104-106, 111-113, 117-119. For this reason alone, Ikeya does not render claims 85, 104-106, 111-113, 117-119 obvious.

Moreover, many of the novel features recited in claims 85, 104-106, 111-113, 117-119, and 124 provide advantages not found in Ikeya. Although claims 85, 104-106, 111-113, 117-119, and 124 are not limited to those advantages and Applicants are not relying on those advantages as a means of distinguishing claims 85, 104-106, 111-113, 117-119, and 124 from Ikeya, the fact that the novel features of claims 85, 104-106, 111-113, 117-119, and 124 provide advantages not found in Ikeya establishes that those novel features are not obvious in view of Ikeya.

For example, claim 85 describes a leaf structure comprising a structural material disposed on a conductive seed material. In contrast, Ikeya's entire structure at references 102, 103, 105 of Figure 1 is made of a single material. The structure of the leaf portion described in claim 85 is thus not only different than the structure of Ikeya but is also more advantageous. For example, the presence of the seed material allows the structural material to be deposited using electroplating and/or lithographic techniques. Therefore, Ikeya does not teach or suggest the interconnect element of dependent claim 85.

As another example, claim 104 includes "a third support spaced apart from the first support and coupled to the opposite side of the first leaf portion." As should be apparent from the Attachment 1 attached to the Office Action, Ikeya cannot be modified to accommodate such a third support because there is simply no room for such a third support, nor is there any reason to add such a third support to Ikeya. Therefore, claim 104 is not obvious in view of Ikeya.

As yet another example, claim 105 includes a third leaf portion. As discussed above, one advantage of utilizing multiple leaf portions is that the spring characteristics of the interconnect element can be distributed among the leaf portions. As also discussed above, Ikeya discloses only one flexible portion—element 103—and thus cannot distribute spring properties among multiple elements of the contact structure of Figure 1.

Still more examples are claims 106 and 124, which recite that the contact tip and leaf portions (or structures) are "structurally distinct and separate elements." An advantage arising from making the tip and leaf (or structure) portions structurally distinct and separate elements is that this facilitates making the interconnect structure using photo-lithographic processes, such as

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those processes used to make small circuits on semiconductor materials. Using such processes, one can make small, precisely positioned interconnect elements. Again, Ikeya provides no such advantage.

As still further examples, claims 111-113 recite features in which a spring constant or the maximum deflection of the interconnect element is distributed over a plurality of leaf structures. Because only element 103 in Ikeya can move (as discussed above element 102 is "fixed"), the entire spring constant and deflection in Ikeya must be concentrated only in element 103 and cannot be distributed among multiple such elements.

More examples can be found in claims 117-120. Claims 117-119 recite specific shapes of the leaf structures, and claim 120 recites that a leaf structure includes an opening. Such shapes and openings can affect the spring and deflection characteristics of the interconnect structure and thus can be advantageous. In contrast, there is no reason to—and indeed it would be impractical if not impossible to—change the shape of Ikeya's elements 102 and 103 to a cylindrical, "H," or rectangular shape or to fashion Ikeya's elements 102 and 103 with an opening.

For these and other reasons, claims 85, 104-106, 111-113, 117-119, and 124 are not obvious in view of Ikeya.

New independent claim 129 includes "a beam structure comprising closed ends and a hollow space between the closed ends." Ikeya does not teach or suggest such a beam structure. Therefore, independent claim 129 and claims 130-135, which depend from claim 129, are patentable over Ikeya.

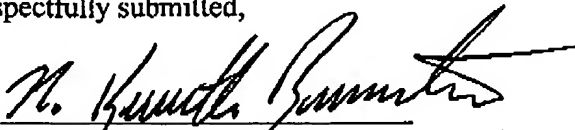
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In view of the foregoing, Applicant submits that all of the claims are allowable and the application is in condition for allowance. If the Examiner believes that a discussion with Applicants' attorney would be helpful, the Examiner is invited to contact the undersigned at (801) 323-5934.

Respectfully submitted,

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